

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: THREE PONDS, UPPER	Lake Area (ha):	4.65
Town: WARREN	Maximum depth (m):	4.1
County: Grafton	Mean depth (m):	1.4
River Basin: Merrimack	Volume (m ³):	64000
Latitude: 43°54'30" N	Relative depth:	1.7
Longitude: 71°49'10" W	Shore configuration:	1.31
Elevation (ft): 1730	Areal water load (m/yr):	19.05
Shore length (m): 1000	Flushing rate (yr ⁻¹):	13.80
Watershed area (ha): 129.4	P retention coeff.:	0.48
% watershed ponded: 0.6	Lake type:	natural

BIOLOGICAL:

		14 March 1991	5 September 1990
DOM. PHYTOPLANKTON (% TOTAL)	#1	SPARSE - NO DOMINANT	SYNURA 99%
	#2		
	#3		
PHYTOPLANKTON ABUNDANCE (cells/mL)			195.0
CHLOROPHYLL-A (µg/L)			1.26
DOM. ZOOPLANKTON (% TOTAL)	#1	KERATELLA 69%	KERATELLA 55%
	#2	ROTIFER SPP. 18%	
	#3	NAUPLIUS LARVA 7%	
ROTIFERS/LITER		94	52
MICROCRUSTACEA/LITER		7	24
ZOOPLANKTON ABUNDANCE (#/L)		106	80
VASCULAR PLANT ABUNDANCE			Scattered
SECCHI DISK TRANSPARENCY (m)			3.1
BOTTOM DISSOLVED OXYGEN (mg/L)		4.2	1.3
BACTERIA (fecal col., #/100 ml)	#1		< 10
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

weakly stratified

Depth of thermocline (m): None
Hypolimnion volume (m³) : None
Anoxic volume (m³) : None

CHEMICAL:

Lake: THREE PONDS, UPPER
Town: WARREN

	14 March 1991		5 September 1990		
DEPTH (m)	1.5	3.0	1.5		3.0
pH (units)	5.5	5.6	5.4		5.4
A.N.C. (Alkalinity)	2.0	1.8	0.4		0.7
NITRATE NITROGEN	0.27	0.23	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.62	0.40	0.28		0.33
TOTAL PHOSPHORUS	0.005	0.001	0.012		0.012
CONDUCTIVITY (μ mhos/cm)	24.0	22.5	15.9		16.2
APPARENT COLOR (cpu)	30	33	44		48
MAGNESIUM			0.19		
CALCIUM			1.5		
SODIUM			0.6		
POTASSIUM			0.20		
CHLORIDE	< 2	< 2	< 2		< 2
SULFATE	3	3	4		4
TN : TP	178	630	23		28
CALCITE SATURATION INDEX			6.1		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1990

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	2	1	0	3	Oligo.

COMMENTS:

1. The entire shoreline of the pond was surrounded by woody wetlands - primarily leatherleaf and sweet gale. The plants are not depicted on the plant map because they were not in the open water.
2. Dominant genera of wholewater phytoplankton were Cryptomonas (35%) and tiny green flagellates (25%).

THREE PONDS, UPPER

WARREN



Rough Bathymetric Chart

DES - 1990

Sounded by Fathometer

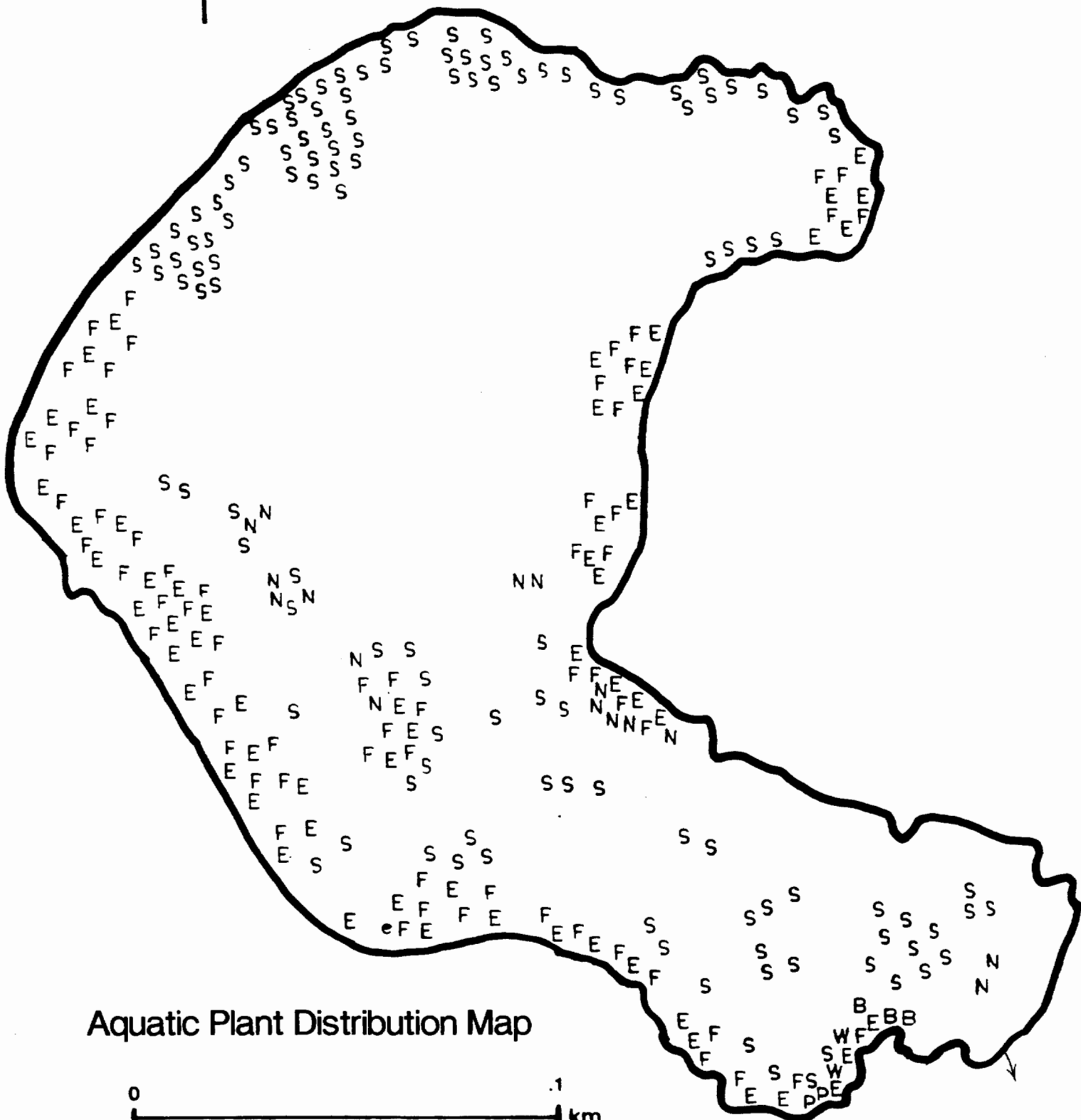
5 ft. depth contours

111-230

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THREE PONDS, UPPER

WARREN



Aquatic Plant Distribution Map

0 .1 km

[illegible]